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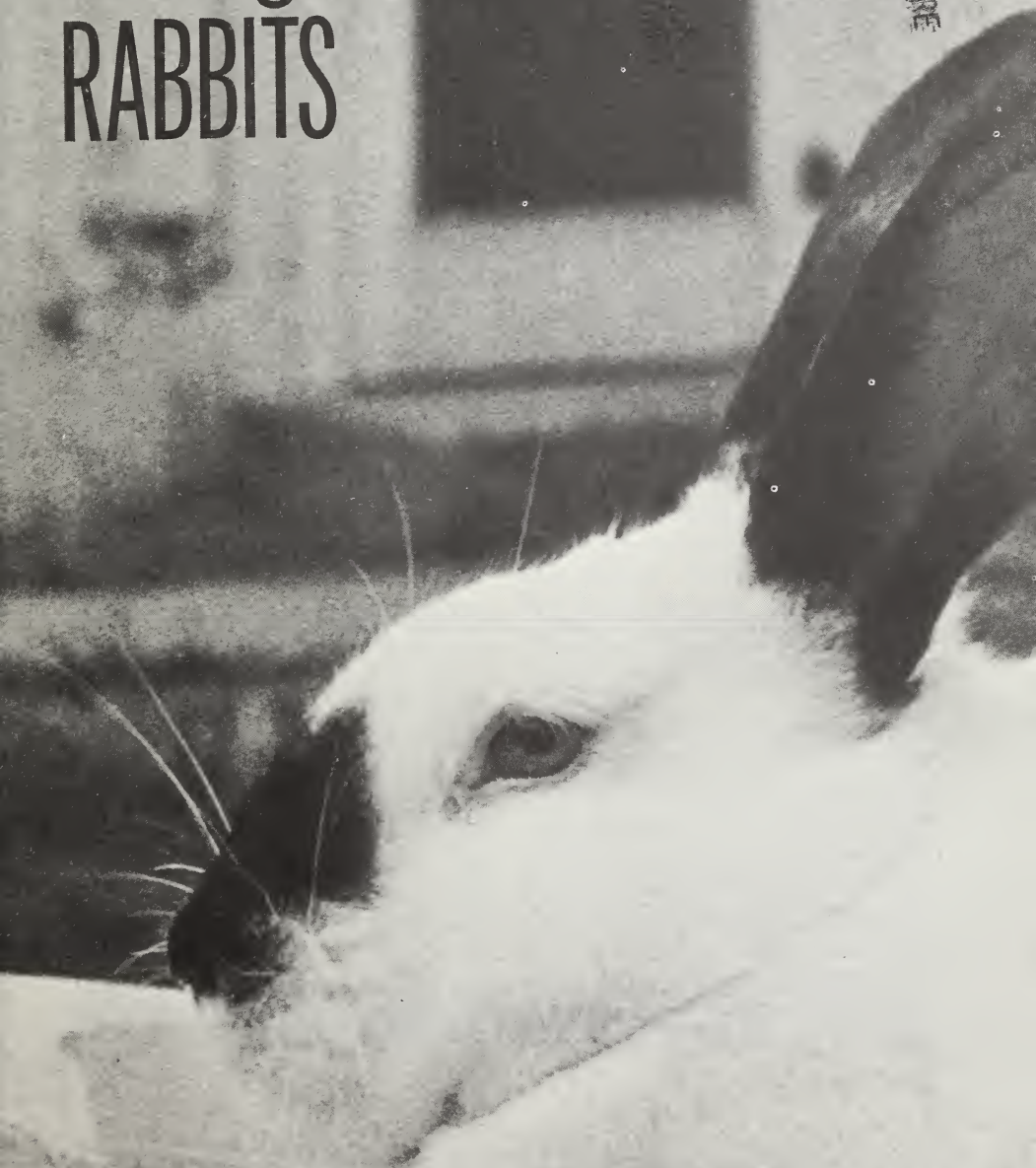
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Selecting and Raising RABBITS

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This bulletin is being issued to answer the many thousands of requests for information about rabbits that are received each year by county agricultural agents, State colleges of agriculture, and the U.S. Department of Agriculture.

In the United States, 8 to 10 million domestic rabbits are raised for meat production each year. In addition, about 500,000 rabbits are raised for medical and biological purposes.

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This publication supersedes FB 2131, "Raising Rabbits."

Selecting and Raising RABBITS

*Prepared by
National Program Staff, Agricultural Research Center,
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Rabbit raising is especially adapted to small farms and urban areas where other live-stock projects are not practical. Rabbits are excellent for 4-H Club, Future Farmers of America, and Boy and Girl Scout projects; they make good pets; and raising and breeding them for show is a popular hobby.

Most domestic rabbits are raised for meat production. Americans eat 25 to 30 million pounds of domestic rabbit meat each year. These meat-producing rabbits come from small backyard rabbitries, and from large commercial rabbitries. Rabbit raising lends itself to both types of production.

Rabbitskins have some commercial value. Better grades are used in making fur garments and trimmings, but most skins are byproducts of meat production. Because of the relative cheapness of skins from meat-producing rabbits, a large volume of skins is

necessary to market them satisfactorily.

An increasing demand for rabbits for biological purposes offers marketing opportunities to breeders living near hospitals and laboratories.

SELECTING A BREED

Decide whether you want to raise rabbits for meat, fur, laboratory purposes, or show—then select the breed best adapted to this choice. Mature animals of the small breeds weigh 3 to 4 pounds, medium breeds 9 to 12 pounds, and large breeds 14 to 16 pounds.

Rabbits best suited in size and conformation for meat and fur production are the medium and large breeds (fig. 1). If you have a good market for rabbitskins, it may be desirable to select one of the white breeds for meat production. White skins generally bring the highest prices.

If you are planning to raise rabbits for laboratory purposes,



BN-21010

Figure 1.—Representative breeds of meat rabbits. *Left, New Zealand. Right, Californian.*

check with nearby hospitals, laboratories, and city and county health offices to find out the type, age, and size of animals desired.

Rabbit fanciers can select from a large number of breeds for show or pet purposes. The American Rabbit Breeders Association lists standards for 28 breeds, and about 77 varieties of these breeds. The standards cover type, color, size, and other breed requirements. Disqualifications are also listed.

Following are descriptions of some of the common breeds and varieties of domestic rabbits. The principal uses, approximate mature weight, and color are listed for each breed and variety.

American Chinchilla.—Show and fur; 9 to 12 pounds; surface fur gray, underfur deep blue-gray, belly white.

Californian.—Meat and show; 8 to 10½ pounds; body white with colored nose, ears, feet and tail.

Champagne d'Argent.—Show and meat; 9 to 12 pounds; under-

fur dark slate blue, surface fur blue white or silver with a liberal sprinkling of long black guard hairs.

Checkered Giant.—Show and fur; 11 pounds or over; body white with black spots on cheeks, sides of body and hindquarters. Wide spine strip. Black ears and nose, and black circles around the eyes.

Dutch.—Show and laboratory; 3½ to 5½ pounds; body black, blue, chocolate, tortoise, steel gray, or gray. White saddle, or band, over the shoulder, under the neck, and over the front legs and hind feet.

English Spot.—Show, meat, and laboratory; 9 to 12 pounds; white body with black, blue, chocolate, tortoise, lilac, gray, or steel-gray spots. Head spots appear on nose, ears, cheeks, and as circles around eyes; spine spots extend from base of ears to end of tail; side spots extend from base of ears to middle of hindquarters.

Flemish Giant.—Show and

meat; 13 pounds or over; body steel gray, light gray, sandy, blue, white, or fawn.

Himalayan.—Show and laboratory; 2½ to 5 pounds; color same as Californian.

New Zealand.—Meat and show; 9 to 12 pounds; body white, red, or black.

Polish.—Show and laboratory; 3½ pounds; body white, black or chocolate. Eyes are blue or ruby red.

Rex.—Show and fur; 7 pounds or over; the color of this variety can be representative of any breed.

Satins.—Show and fur; 8 to 11 pounds; body black, blue, red, copper, or white, or can be the same as Chinchilla, Californian, or Havana.

Silver Martens.—Show and fur; 6½ to 9½ pounds; body black, blue, chocolate or sable with silver-tipped guard hairs.

SELECTING FOUNDATION STOCK

The essential requirements for good foundation stock are health, vigor, longevity, ability to reproduce, and desirable type and conformation.

If you are just getting started in rabbit production, select young animals for foundation stock. This will give you an opportunity to become acquainted with the rabbits and their habits before they reach production stage. Begin on a small scale, 1 or 2 bucks and 10 to 20 does, and expand opera-

tions as you gain experience and as market demands justify.

National, State, and local rabbit breeders' organizations can furnish names and addresses of breeders who have stock for sale. Deal directly with reliable breeders who will stand behind the stock they offer. Brokers who handle live rabbits for market are seldom able to vouch for conditions under which their animals were produced.

HOUSING AND EQUIPMENT

The building and equipment needs for a rabbitry depend on local building regulations, climatic conditions, the size of the operation, and the amount of money you can invest.

When planning the rabbitry, review literature on the subject, and if possible, discuss building and equipment needs with a successful rabbit breeder.

Angora Rabbits

Angora rabbits are raised primarily for wool production. The animals are sheared, or plucked, every 10 to 12 weeks. Because of the competition from imported Angora wool and from other natural and synthetic fibers, the market price for Angora wool is generally low. It is advisable to use Angoras as dual-purpose animals for meat and wool production.

Housing

In areas where the climate is mild, hutches can be placed outdoors in the shade of trees or buildings, or they can be placed under a lath superstructure. Sunlight in the rabbitry will help maintain sanitary conditions, but the rabbits should be given a choice between shade and sunlight at all times.

During hot weather, some cooling measures must be provided in addition to shade. This can be accomplished by using overhead sprinklers, or foggers, placed within the building. Make sure the building is adequately ventilated and that the rabbits receive the benefit of prevailing breezes.

In areas where strong winds and cold weather prevail, hutches can be protected by placing them in buildings that open to the south or east. During stormy weather these buildings can be closed by the use of

curtains or panels (fig. 2). Where weather is extremely cold, extra protection may be needed.

Hutches

Provide individual hutches for mature rabbits. Hutches should be about 2 feet high and no more than 2½ feet deep. Make the hutches 3 feet long for small breeds, 4 feet for medium breeds, and 6 feet for large breeds. (All figures are inside measurements.)

Hutch construction varies from all-wire quonset-shaped hutches for use inside buildings (fig. 3) to semienclosed hutches for use outdoors (fig. 4).

An inexpensive hutch suitable for small rabbitries is shown in figure 5. This hutch is light, movable, and easy to build. During warm weather it can be placed under trees or on the protected side of a building. During cold weather it can be



BN-26573

Figure 2.—Rabbitry adapted to areas where strong winds and cold weather prevail. Note removable side panels. (Courtesy of Small Stock Magazine.)



BN-26574

Figure 3.—Typical rabbitry used in areas where the climate is mild.
(Courtesy of Small Stock Magazine.)



11527-D

Figure 4.—Semienclosed hutches for use outdoors. Curtains on the front row of hutches can be dropped to break the wind and to keep out rain and snow.



83091-B

Figure 5.—A two-compartment hutch suitable for small rabbitries. Note the hay manger between the compartments.

moved into a well-ventilated building. The hutch can be made from scrap lumber and hardware cloth or wire mesh.

Several types of metal and all-wire hutches are available on the market. Plans and specifications for building these hutches can be obtained through advertisements in various rabbit journals.

Several types of flooring can be used in building hutches. Wire mesh flooring is used extensively in commercial rabbitries where self-cleaning hutches are desirable. Solid and slat flooring, or a combination of solid flooring at the front and a strip of wire mesh or slats at the back, can also be used in hutch construction.

If mesh flooring is used, examine the surface for sharp points. Always put the smooth surface on top. For slat floor-

ing, use 1-inch hardwood slats and space them $\frac{5}{8}$ or $\frac{3}{4}$ inch apart. To provide drainage, solid floors should slope slightly from the front to the rear of the hutch.

Nest Boxes

A good nest box should provide seclusion for the doe when she gives birth to her litter, and protection for the litter. It should be simple to clean and maintain, provide good drainage and ventilation, and be accessible to the young when they are large enough to leave and return to the nest.

Inexpensive nest boxes can be made from sturdy packing boxes—apple boxes are ideal. Cut an opening in one end of the box, or remove a portion of one end, to provide easier access for

the doe and young. As an alternative, one end may be removed and replaced with removable slats. Leave the slats in place until the young rabbits are large enough to leave and return to the nest.

Nail kegs also make suitable nest boxes. Nail a board across the open end of the keg—cover $\frac{1}{3}$ to $\frac{1}{2}$ of the opening. To keep the keg from rolling, extend the board a few inches beyond the edge of the opening. Drill several 1-inch holes in the closed end of the keg for ventilation.

During cold weather, young rabbits may need more protection than the standard nest box offers. A simple winter nest box can be made by lining the inside of a standard nest box with two or three layers of corrugated cardboard. Drill two or three holes in the lid for ventilation, then fill the box with clean straw so the doe can burrow a cavity for a nest.

Feeding Equipment

Use feed crocks, troughs, hoppers, and hay mangers that are large enough to hold several feedings. Use a type that will prevent waste and contamination of feed.

You can purchase crocks especially designed for rabbit feeding. These crocks are heavy enough so they won't be easily tipped, and they have lips that prevent the rabbits from scratching out feed. Crocks can

be used for feeding pellets or whole grain.

When hay or green feed is included in the ration, hay mangers should be incorporated into the hutches. You can save space by having one manger serve two hutches. Hay waste can be reduced by placing troughs under the mangers. These troughs can also be used to feed supplemental grains.

Hoppers save considerable time and labor when they are designed for self-feeding. Use them for feeding pregnant does, does with suckling litters, and rabbits being conditioned for market. Hoppers can be made from cans, hardboard, wood, or other suitable material. An inexpensive self-feeder can be made from a 5-gallon can.

Watering Equipment

Rabbits need clean, fresh water at all times. During warm weather, a doe and her litter will drink about 1 gallon of water per day.

Crocks and coffee cans are suitable watering devices for small rabbitries. Coffee cans are especially useful during cold weather because the ice can easily be broken and removed from the cans.

Automatic watering systems provide a steady supply of clean, fresh water. They are used extensively in commercial rabbitries to reduce labor, but they are not practical for use in most small rabbitries.

FEEDS

Feed is one of the biggest items of expense in raising rabbits. How much work you must do in feeding depends on the type of diet you choose. Each herd presents an individual problem. Suit the feeds to the type of production in which you are engaged.

Hay

Hay will supply the bulk, or fiber, required for a balanced rabbit ration. High-quality hay will also provide much of the protein needed to balance the ration.

Legume hays, including alfalfa, clover, lespedeza, cowpea, vetch, and peanut, are palatable and high in protein. Grass hays, including timothy, prairie, Johnson grass, Sudan grass, and carpetgrass, are less palatable and contain about half as much protein, but they are valuable for feeding where legumes are not readily available. When grass hays are fed, include additional protein supplement in the ration.

Fine-stemmed, leafy, well-cured hay can be fed whole. Chop coarse hay into 3- to 4-inch lengths. This will reduce waste and make the hay more convenient for feeding.

Grain

Oats, wheat, barley, sorghum grain, buckwheat, rye, and soft varieties of corn can be fed

whole or in milled form. To prevent waste, feed flinty varieties of corn in meal form. Grains are similar in food value—one can be substituted for another without materially altering the nutritive value of the ration.

Byproducts from grain manufacturing, including bran, middlings, shorts, and red-dog flour, can be included in meal mixtures and pellets.

Supplements

Soybean, peanut, sesame, and linseed meals are rich in protein. These high-protein meals are desirable for balancing pelleted rations. Protein meal should not be mixed with whole grains, because much of the meal will settle out and be wasted. If whole grains are fed, supply the protein in flake, cake, or pelleted form.

The salt requirements for rabbits can be supplied by putting small salt blocks or spools in the hutches so the rabbits can feed at will. It can also be supplied by adding 0.5 to 1 percent of salt to mixed feeds or pellets. In areas where the soil is deficient in mineral elements, give the rabbits the same type of mineralized salt that is fed to other farm animals.

Pelleted Feed

Many brands of pelleted feed are available on the market. Pellets require little storage space and are easily fed. In

some areas they may be the only rabbit feed available.

There are two general types of pelleted rabbit feed—all-grain pellets to be fed with hay, and complete pellets (green pellets). Complete pellets usually contain all the elements necessary for a balanced ration.

Pelleted rabbit feed should be bite-size. Pellets should be no larger than $\frac{3}{16}$ inch in diameter and $\frac{1}{4}$ inch long. If pellets are larger, small rabbits will bite off part of a pellet and waste the rest.

The ingredients and proportions used in making pellets will vary. Follow the advice of the manufacturer when pellets are used in the ration.

Miscellaneous Feeds

Rapid-growing plants—grasses, palatable weeds, cereal grains, and leafy garden vegetables free of insecticides—are high in vitamins, minerals, and proteins. These plants make excellent feed for the breeding herd.

Root crops, such as carrots, turnips, and beets, are desirable rabbit feed throughout the year and are particularly good in winter when green feed is not available.

Fresh green feeds and root crops should be considered as supplements to the regular diet. They can be used in the ration when they fit into the management program. Green feeds and root crops should be fed spar-

Rabbits re-ingest part of their food, usually in the early morning when they are unobserved. They re-ingest only the soft matter that has passed through the digestive tract. This trait is called “pseudo-rumination,” from the characteristic of ruminants (cows and sheep) of chewing the cud. Some rabbit producers who have observed this process believe it indicates a nutritional deficiency. However, the process is normal in rabbits and may even enhance the nutritive value of the food by virtue of the second passage through the digestive tract.

ingly to rabbits that are unaccustomed to them. Do not use feed that is spoiled or contaminated.

Dry bread and other table waste (except meat and greasy or sour foods) are acceptable to most rabbits. They add variety to the diet when used to supplement the regular ration.

FEEDING

Select rations that are suited to the needs of your rabbits. Dry does, herd bucks, and junior does and bucks need rations that will keep them in good breeding condition. Pregnant does and does with litters need a higher proportion of concentrate in their rations.

Feeding for Maintenance

Junior does and bucks, mature dry does, and herd bucks not in

service but in good physical condition can be maintained on hay alone if fine-stemmed, leafy, legume hay is fed. If coarse legume hay or grass hay is fed, give each 8-pound animal 2 ounces ($\frac{1}{3}$ cup) of all-grain pellets or grain-protein mixture several times per week. Adjust the amount of concentrate in the ration for rabbits of other weights.

Feed herd bucks in service the same amount of concentrate and give them free access to choice hay.

Alfalfa pellets may be full-fed to developing junior does and bucks as the only feed from the time they are weaned until they are ready for breeding. Purchase pellets containing 1 percent of salt and 99 percent of No. 2 leafy or better grade alfalfa meal (15-percent protein). If alfalfa pellets are not available, all-alfalfa turkey crumbles can be substituted.

Feeding Pregnant Does and Does With Litters

To feed a doe properly, it is necessary to know definitely whether she has conceived. Palpating 14 days after breeding is a quick and accurate method of determining pregnancy (see p. 14).

After the mating, maintain the doe in breeding condition on good-quality hay. If the doe fails to conceive as determined by palpation 14 days after breeding, breed her again and keep

her on a maintenance ration until she is diagnosed as pregnant.

When the doe is diagnosed as pregnant, give her all the concentrates she will eat in addition to good-quality hay. All-grain pellets or a grain-protein mixture can be fed with the hay, or you can feed a complete pelleted ration and no hay.

Gradually change over to the new ration. Sudden changes in rations fed during the gestation period may cause some does to go "off feed."

After the doe kindles, feed her in the same manner as during pregnancy. Keep her on the high-concentrate ration until the young are weaned. Provide additional feed as the litter develops (fig. 6).

BREEDING

The gestation period of rabbits, or the period from mating to kindling, is 31 or 32 days. Some litters may be kindled as early as the 29th day or as late as the 35th day, but 98 percent of the normal litters will be kindled between the 30th and 33d day.

Age To Breed

The proper age of bucks and does for the first mating depends on the breed and individual development. Small breeds develop more rapidly and are sexually mature at a younger age than medium and large breeds. Some individual rab-



N-45947

Figure 6.—Feed hoppers made from 5-gallon cans make ideal self-feeders for pregnant does and does with suckling litters.

bits within a breed will develop more rapidly than others. Generally, the small breeds can be mated when the bucks and does are 4 to 5 months old, the medium breeds at 5 to 6 months, and the large breeds at 9 to 12 months. Mate does when they reach maturity. If mating is delayed too long, breeding difficulties may occur.

Does that are maintained in good physical condition should produce litters until they are 2½ to 3 years old.

Breeding Schedule

If rabbits are being raised for show purposes, it may be advisable not to raise more than two or three litters per year.

Arrange matings so the offspring will be of proper age and development for show classification.

For meat and fur production, you can work breeding animals throughout the year. With a gestation period of 31 or 32 days and a nursing period of 8 weeks, a doe can produce four litters in a 12-month period. Does of heavy producing strains can be mated 6 weeks after kindling if they are in good condition. If the litter is lost at kindling and the doe is in good condition, she can be rebred earlier than called for by the regular schedule.

Matings

A doe shows signs of being ready for mating by restlessness and nervousness, by rubbing her chin on feeding and watering equipment, and by attempting to join other rabbits in nearby hutches. It is not necessary to depend on external signs to determine when a doe is to be bred. Set up a definite schedule and follow it, whether the does show signs of being ready for service or not.

Always take the doe to the buck's hutch for service. Mating should occur almost immediately when you place the doe in the buck's hutch. When the mating is completed, return the doe to her own hutch. Make a record of the date of mating, and the name or number of the buck and doe.

Try to maintain one buck for

each 10 breeding does. Mature, vigorous bucks can be used several times a day for a short period.

Determining Pregnancy

An accurate method of determining pregnancy is important in managing the breeding herd. Test mating (placing the doe in the buck's hutch periodically) is not accurate because some does will accept service when pregnant and others will refuse service when not pregnant. Diagnosing pregnancy by the development of the abdominal region and the gain in flesh is not dependable until late in the pregnancy period.

Pregnancy can be quickly and accurately determined by palpating the doe 12 to 14 days after mating.

The method of restraining the doe for palpating is shown in figure 7. Hold the ears and the fold of skin over the shoulders in the right hand; place the left hand between the hind legs,



N-45951

Figure 7.—Proper way to restrain a doe for palpating.

slightly in front of the pelvis; place the thumb on the right side and the fingers on the left side of the abdomen; exert light pressure and move the fingers and thumb gently backward and forward.

If the doe is pregnant, you should be able to distinguish the embryos as marble-shaped forms as they slip between the thumb and fingers. Handle the doe gently, and use only light pressure on the abdominal cavity.

Does diagnosed as pregnant should be placed on a pregnancy ration. Nonpregnant does should be rebred and kept on a maintenance ration until they are diagnosed as pregnant.

Accurate determination of pregnancy by palpation takes practice. If you are inexperienced, repalpate does diagnosed as nonpregnant a week later. If a mistake has been made in the first palpation, the doe can be put on a pregnancy ration and provided with a nest box at the proper kindling time. With practice, you may develop enough skill to diagnose pregnancy as early as the 10th or 11th day.

CARE OF THE LITTER

Kindling

Place a nest box in the hutch 27 days after the doe is mated. A day or two before kindling, the doe will start to pull fur from her body to line the nest, and she usually consumes less feed than the normal amount.

Give her small quantities of green feed. This will have a beneficial effect on her digestive system.

Most litters are kindled at night. Kindling complications are rare when the doe is in good condition. After kindling, the doe may be restless. Do not disturb her until she has quieted down.

Sometimes does fail to pull fur to cover their litters, or they kindle their litters on the hutch

floor. When this occurs, arrange the bedding material to make a comfortable nest and pull enough fur from the doe's body to cover the litter (fig. 8). You can often save the young rabbits by warming them, even if they appear lifeless. Keep some extra fur on hand for such cases.

Inspect the litter the day after kindling. Remove any deformed, undersized, or dead young from the nest box. If



BN-21011

Figure 8.—Newborn litter in nest. Note the ample supply of fur in the nest.

you are careful and quiet when inspecting the litter, the doe generally will not object. If the doe is nervous and irritable, place some tempting feed in the hutch to distract her attention.

You can transfer baby rabbits from a large litter to a foster mother that has a small litter. For meat and fur production, 7 to 9 per litter is desirable. Adjusting the number of young to the capacity of the doe will promote more uniform development and finish at weaning. For best results, the young rabbits should not vary more than 3 or 4 days in age when they are transferred.

The young rabbits should open their eyes 10 or 11 days after birth. The eyes of baby rabbits occasionally become infected and fail to open normally. If the infection is treated promptly, the young rabbits usually recover without any permanent eye injury.

To treat the infection, bathe the inflamed and incrustated eyelids with warm water. When the tissue softens, separate the lids with a slight pressure. If pus is present on succeeding days, treat the eyes with an antibiotic eye ointment or a fresh solution containing 10 percent of argyrol.

Weaning

Young rabbits start coming out of the nest to eat feed when they are 19 or 20 days old. If the young come out of the nest sooner, they may not be getting

enough milk or the nest may be too warm.

The doe usually nurses her young at night or in the early evening and morning hours. If the litter becomes divided, the doe will either nurse the young in the nest or those on the hutch floor. She will not nurse both groups, nor will she pick up the young and return them to the nest.

Leave the young rabbits with the doe until they are 8 weeks old. By that time, the milk supply will have decreased and the young will be accustomed to eating other feed. Fryer rabbits should be in marketing condition by the time they are weaned at 8 weeks (fig. 9).

HERD MANAGEMENT

Records

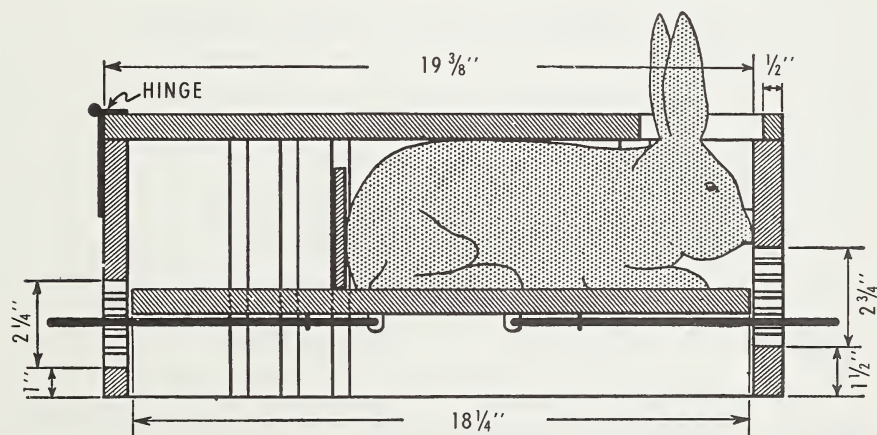
Mark each breeding rabbit for your record system. Tattooing is the best marking method because it is permanent and will not disfigure the ears. Tattooing instruments can be obtained from biological and livestock supply houses. An adjustable box (fig. 10) is convenient for restraining rabbits for tattooing. Ear tags and clips are not satisfactory for marking because they tear out and disfigure the ears.

A convenient and simple record system is needed to keep track of breeding, kindling, and weaning operations. Information from the records can be



N-45954

Figure 9.—Eight-week-old fryer rabbits—weaned and ready for market.



BN-4068

Figure 10.—Vertical section of a box for restraining a rabbit for tattooing. The spring-type holders tacked to the lower side of a movable floor pushes the rabbit toward the top of the box. A movable cross partition holds the rabbit toward the front. Blocks of wood on each side hold the rabbit's head in the center of the hole at the top.

HUTCH CARD

Animal No. W 301 Born 12/12/61 Breed New Zealand White
 Sire W 394- Dam W 604 Litter No. W 714

DATE BRED	BUCK NO.	DATE KINDLED	NO. YOUNG BORN		NUMBER YOUNG RETAINED	LITTER NO.	DATE WEANED	NUMBER WEANED
			ALIVE	DEAD				
6/1/62	W418-	7/2	11	0	8	W19	8/27	8
8/24/62	W418-	9/24	9	0	8	W175	11/19	8
11/16/62	W418-	Passed	11/30					
11/30/62	W421-	12/30	9	1	8	W316	2/24/63	8
2/21/63	W421-	3/24	11	0	8	W465	5/19	7
(A)								

PRODUCTION RECORD

LITTER NO.	WEANING			NOTES:
	NUMBER	AGE	WEIGHT	
W19	8	56	30.2	
W175	8	56	31.0	
Passed	11/30			
W316	8	56	32.0	
W465	7	56	28.0	
(B)				

BN-7013

Figure 11.—Sample of a hutch card for recordkeeping. A, Front; B, back.

BUCK BREEDING RECORD

Buck No. _____

Breed _____

Sire _____

Date born _____

Dam _____

Doe	Location	Date Bred	Result of breeding			Weaned	
			Kindled		Passed		
			Alive	Dead	Date	Number	Weight

BN-7014

Figure 12.—Sample of a buck breeding record.

used to cull unproductive animals and to select desirable breeding stock. The essential features of a simple record system are illustrated in the hutch card and buck-breeding record card shown in figures 11 and 12. Record cards can usually be obtained from feed mills or firms dealing in rabbitry supplies.

Hot Weather Care

Some changes in the general care and management of the

rabbit herd may be needed during hot weather. Make sure the rabbits have adequate shade and water. Good circulation of air throughout the rabbitry is necessary, but strong drafts should be avoided.

Newborn litters and does in advanced pregnancy are the most susceptible to high temperatures. Heat suffering in young causes extreme restlessness. In older animals, heat suffering causes rapid respiration, excessive moisture around

the mouth, and occasional hemorrhaging from the nostrils.

Move rabbits that show symptoms of heat suffering to a quiet, well-ventilated place. Give the rabbits a feed sack moistened with cold water to lie on. Placing water crocks or large bottles filled with ice in the hutches will also help keep the rabbits cool.

In well-ventilated rabbitries, wetting the tops of the hutches and the floors of the house will reduce the temperature 6° to 10° F. on a hot day. The tops of the hutches should be waterproof, as rabbits must be kept dry. If the rabbitry has a concrete or soil floor that drains readily, overhead sprinkling equipment can be used. A thermostat can

be installed to control the sprinkler automatically.

During hot weather it may be difficult to keep the young rabbits comfortable in the nest box. A cooling basket (fig. 13) will provide some relief for the young. Cooling baskets are useful from the time the young are kindled until they are large enough to get out of the nest by themselves.

During the hot part of the day, place the young in the basket and hang it near the top of the hutch. Do not hang the basket in direct sunlight. In the evening, return the litter to the nest box. If high temperatures continue throughout the night, return the young to the cooling basket after they have nursed.



83068-B

Figure 13.—A cooling basket hung in the hutch to provide comfort for the young during hot weather.

Allow them to nurse again in the morning.

Preventing Sore Dewlap

The dewlap, or fold of skin under the rabbit's chin, may become sore during warm weather. This is caused by frequent drinking from water crocks. The fur on the dewlap becomes green and foul and the skin on the dewlap and the inside of the front legs becomes rough and irritated.

Remove the cause by placing a board or brick under the water crock. Raise the crock high enough so the dewlap will not get wet when the rabbit drinks. If the skin is infected, clip off the fur and treat the area with zinc oxide ointment or some other mild disinfectant. Treat the infected area every other day until the irritation clears up.

Disease Control

Sanitation in the rabbitry is the best disease-control method. Remove manure, soiled bedding, and contaminated feed from the rabbitry daily. Wash the watering and feeding equipment frequently in hot soapy water. Rinse in clear water, drain well, and place in the sun to dry. If sun drying is impractical, rinse the equipment in a water-disinfectant solution, then rinse again in clear water.

Isolate animals suspected of being diseased. Leave sus-

pected animals in isolation for at least 2 weeks, or until you can determine definitely whether they are dangerous to the health of the herd. Newly acquired rabbits and those returned from shows should be placed in quarantine at least 2 weeks. Bury or burn dead animals.

Effective treatments are not known for many rabbit diseases. It is usually simpler and safer to destroy a few sick animals than it is to treat them and risk spreading infection to healthy stock. This is especially true of animals that have respiratory infections.

Preventing Injuries

Rabbits are often injured by improper handling. Never lift rabbits by the ears or legs. The proper way to lift and carry rabbits is shown in figures 14 and 15.

Toenails of rabbits confined in hutches do not wear normally. The long toenails often get caught in wire mesh flooring and the rabbits injure themselves trying to get loose. You can prevent this problem by cutting the toenails periodically. Hold the rabbit's foot up to daylight and observe the cone in the toenail. Use side-cutting pliers and cut the toenail below the tip of the cone. When done correctly, this operation will not cause hemorrhaging or injury to the sensitive part of the toenail.



N-45957

Figure 14.—To carry a small rabbit, grasp the loin region gently and firmly. Put the heel of the hand toward the tail of the animal.

MARKETING

Some producers sell live rabbits direct to brokers. However, many small producers do their own slaughtering, packaging, and marketing.

Rabbits raised for meat and fur are usually marketed when they reach fryer weight (4 to 6 pounds). Most medium and large breeds should develop a desired weight and finish by the time they are weaned at 2 months of age.

In some areas there may be a good market for roasters (mature rabbits). Culls from the breeding herd can be fattened for roasters, or it may be profitable to develop young rabbits to heavier weights.

Slaughter

Slaughter in clean sanitary quarters. Check with local health authorities on local slaughtering regulations and restrictions.

Rabbits can be made unconscious for slaughtering by dislocating the neck or by stunning with a sharp blow at the base of the skull.

To dislocate the neck, hold the animal by its hind legs with the left hand. Place the thumb of the right hand on the neck just back of the ears and place the fingers under the chin (fig. 16). Stretch the animal by pushing down on the neck with the right hand. Press down with the thumb, then raise the animal's



N-45959

Figure 15.—To carry a medium or large rabbit, grasp the fold of skin over the shoulder with the right hand and support the rabbit by placing the left hand under the rump. If the rabbit scratches or struggles, hold him snugly under the left arm.

head with a quick movement to dislocate the neck. This method is instantaneous and painless when done correctly.

Suspend the carcass by inserting a hook between the tendon and bone of the right leg. Insert the hook just above the hock. Remove the head immediately to permit thorough bleeding. Cut off the tail, the front feet, and the free rear leg at the hock joint. Cut into the skin just below the hock of the suspended leg, then slit open the skin on the inside of the leg to the base of the tail. Continue the incision to the hock of the left leg. Separate the edges of the skin from the carcass and pull the skin down over the animal. Leave as much fat on the carcass as possible.

After skinning, make a slit along the median line of the belly. Remove the entrails and gall bladder, but leave the liver and kidneys in place. Unhook the suspended carcass and remove the right hind leg at the hock.

Wash the carcass in cold water. Brush the neck thoroughly in water to remove the blood. Do not leave the carcass in water more than 15 minutes. The carcass will absorb water if soaked for a prolonged period. Chill the carcass in a refrigerated cooler.

Cutting and Packaging

Hotels, restaurants, hospitals, clubs, and other establishments

usually purchase the whole carcass. Their chefs prefer to cut the carcass to meet their own requirements.

Housewives usually prefer the cut-up packaged product. Use a knife to cut up the carcass. Do not use a cleaver because it may splinter the bones.

A paraffined box with a cellophane window makes a neat, sanitary package for the chilled rabbit carcass. If the meat is to be frozen, wrap the box in a special sealable wrapping to prevent freezer burns and loss in palatability.

A box 9 inches long, 4 inches wide, and $2\frac{1}{2}$ inches deep is suitable for a fryer carcass weighing $1\frac{3}{4}$ to $2\frac{1}{2}$ pounds.



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Figure 16. — How to hold a rabbit for dislocating the neck.

Arrange the cuts attractively. Include the heart, kidneys, and liver.

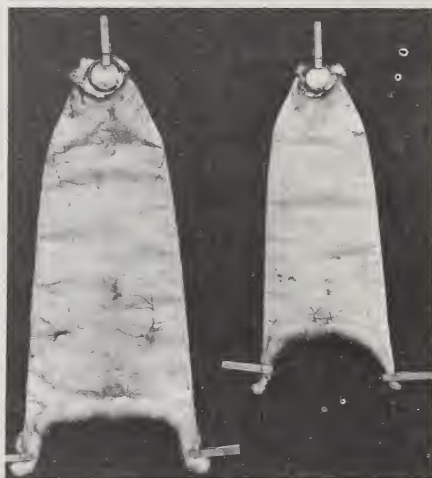
If you sell to the home trade or furnish butchers with meat that is to be consumed locally, you can make a neat, sanitary, and inexpensive package by arranging the pieces and a sprig of parsley on a paper plate. Cover the plate with a piece of clear cellophane.

Skins

Skins should be shaped while still warm. Place the skins, flesh side out, on wire or board shapers (stretchers). Place the forepart of the skin over the narrow end of the shaper and make sure the legs are all on the same side (fig. 17). Remove all wrinkles from the skin.

The day after skinning, examine the pelts. Make sure that the edges are dry and flat, the skin of the front feet is straightened out, and all patches of fat have been removed.

Skins must be thoroughly dried before being packed, but do not dry the skins in the sun or by artificial heat. Hang them up so air can circulate freely. During warm weather, sprinkle the skins with naphtha flakes. Do not use salt to cure rabbitskins.



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Figure 17.—How to place a rabbit pelt on a shaper, or stretcher, with all the legs on the same side.